MUNICIPAL SOLID WASTE MANAGEMENT IN SPECIAL REFERENCE TO DEHRADUN, UTTARAKHAND: A SOCIO- LEGAL STUDY

A

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Candidate's Declaration

I, **Jaya Agarwal** declare that the synopsis entitled, "***Municipal Solid Waste Management in special reference to Dehradun, Uttarakhand: A Socio-Legal study***" being submitted in the partial fulfillment of the requirement for the award of the degree of Doctor of Philosophy in Law under ICFAI Law School, The ICFAI University, Dehradun during the academic year 2022-23.

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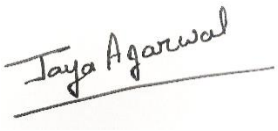

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CERTIFICATE

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ABSTRACT

A rise in urban populations has necessitated the need for municipal solid waste management (MSWM). Municipal corporations and urban local authorities have a legal obligation to reduce and effectively handle solid waste. The local municipality of Dehradun is experiencing considerable issues as a result of increased MSW output and difficulty in appropriately handling it. Throughout the course of history, Dehradun has served as the epicenter of all significant development initiatives, and the inflow of people from its neighboring districts and the rapid intensification of its businesses during this time period have put immense strain on the local authorities and municipal entities to dispose of the garbage created by homes and business sectors. Unhygienic conditions for residents and harm to human well-being are the result of waste being dumped or burned openly by residents in public places like streets and sewers, open ground, and fallow land. There is no current approach manageable or implemented by the municipality for solid waste management in Dehradun, consequently, there is a dire and urgent requirement to implement effective improvements in order to make this clean, attractive, and pleasant. This study focuses on waste production, processing, mass transit, and dumping in Dehradun through an effort to find possible areas for improvement. It becomes a difficult challenge to suggest a single unified definition for MSW applicable for all countries. The urban population of Dehradun has expanded intensely, leading to an increase in urban waste. Since becoming the capital of the Uttarakhand province in 2001, Dehradun population has increased above32 % (1.28 M in 2001 -1.69 M in 2011). Between 2001 and 2011–12, the number of industrial units in Dehradun expanded drastically from 247 to 3044. As a result, the urban area of Dehradun generates

291.8 MT of municipal waste daily. This research work identifies the important legal aspects of MSWM that need to be addressed in order to achieve aforesaid goal. At last, the findings of this research will assist local governments in developing waste management systems that are more creative and environmentally friendly. It has been noted that a lot of policies and programs fall short of their goals due to poor stakeholder understanding and enforcement by regulators. The current study offers a thorough analysis of SWM and, more importantly, emphasizes several key features of the policies and programs launched by the Indian and Uttarakhand governments to address the problems with solid waste management in our society.

1. Introduction

"Cleanliness is next to godliness."

(Mahatma Gandhi)

The environment is an epochal part of human development; ever since the human race came into existence and requisite proliferation started – flora and fauna have been ruthlessly, recklessly misused in the name of development. Even the Benthos was disturbed because of the radical use of resources in the name of progress.

Today, many burning issues related to the environment widened the scope of environmental law immensely. The researcher has opted Municipal Solid waste management topic, which has great significance in environmental law. Because it is obvious to everyone that there has never been a society or culture without waste and that, before the industrial era, waste was rarely a problem for people, there has never been a society or culture.

This started to alter as cities grew in size and populations increased. Still, more crucially, as manufacturing technology advanced and mass production of various goods began, consumerism developed into a throw-away culture, and throwaway goods wreaked havoc on the environment. Indeed, the amount of trash we can accumulate, dispose of in landfills, or throw into the ocean is reaching its regional and global boundaries. The situation of the world has been dramatically exacerbated by plastic. Micro plastic pollution in our oceans is posing a threat to ecosystems, human health, and marine life.

The study examined the current solid waste management system and determined its advantages and disadvantages. Waste needs to be collected or transported efficiently or appropriately. Officially, neither composting nor recycling garbage is allowed. People are not involved in the decision-making process or the SWMS, and most waste is discarded in open landfills.

India is quickly transitioning from an agriculturally based country to an industrial one. According to the 2011 census, 31.2% of people reside in urban areas, and this percentage is rising. Therefore, it can be claimed that the mismanagement of municipal solid waste results from the growing urban population. According to one of the studies the planning commission released in 2014, 377 million people live in metropolitan areas. Municipal solid waste generation in metropolitan areas is now at 62 million tons annually, potentially increasing to 165 million tons by 2031. Therefore, 1,175 hectares of land are needed each year to contain this solid garbage. The municipality spent 50% of its budget in 2010 on managing solid trash, yet 50% of the rubbish is still not collected, and uncollected waste is recklessly thrown on streets, endangering human health. The researcher also identified and examined the variables that affect Uttarakhand solid waste management system. It is discovered that the following are the factors:

- The current decision-making process. Generally, decision-making's bureaucratic and top-down nature discourages individuals from participating in solid waste management.
- How to waste is perceived as a concern by the public compared to other issues. Even though many people see garbage as a threat, many would prefer to handle other issues first, such as finding work or access to clean water.
- Information transformation gaps between decision-makers and the general population. The majority of individuals are unaware of the decision made by the government,
- The connection between good governance and political stability. Plans and procedures started by one group of individuals in authority are frequently abandoned in the middle when a different group assumes control.
- There are fewer self-organized grass-roots organizations. These groups can

positively impact solid waste management by including and ensuring public engagement in various projects.

The researcher offers some recommendations for creating a long-term, sustainable solid waste management system after considering all the problems and circumstances. Some of these recommendations include the following:

- Including people in the decision-making process for solid waste management through consultation; and
- Responsive bureaucracy.
- Encouragement of trash reduction, reuse, and recycling;
- Encouragement of community-based composting;
- Collection of segregated garbage at doorsteps; and

The researcher will attempt to demonstrate the unsustainable nature of the present SWMS. The list of recommendations can be used to enhance the suggested system. According to the study, residents of Uttarakhand are eager to engage in and contribute to creating a sustainable system.

2. Research Problem

Degradation of the environment is a burning issue. Owing to littering by humans, the clean and healthy environment has degraded. We are the first generation to see the effect of global warming and the last one to solve this problem. However, we are not serious about this. What we are going to give to our future generation is certainly, a serious concern. Everyone has knowledge of environmental problems but we have to have quick solution. Waste management has become a taboo because of massive population which has been growing day by day. Beautiful cities have become concrete jungle of buildings and residents of these colonies produce tons of garbage which is harming the environment brutally. Land River,

Oceans are getting suffocated because of garbage which is piling up and endangering the life of living beings.

Research question: With the above stated problem statement, the following questions are formulated.

- Whether the legislative measures designed for environmental protection, and municipal solid waste management have succeeded in achieving the objectives?
- Whether the existing mechanism for environmental protection, and municipal solid waste management needs to be replaced by a more effective one?
- What precise role the judiciary has played in protecting and safeguarding the environment?
- Whether the existing municipal SWMS shields community healthiness, environment, and natural resources in Uttarakhand.

3. Literature Review

(Rosencranz & Upadhyay, 2011)There should be a set ratio between the technical staff at SPCBs and the number of industrial units under their jurisdiction. For example, it is recommended that for every 500 industrial units, there be at least one Executive/Assistant Engineer in charge of monitoring and ensuring compliance. The proportion of technical to non-technical employees needs to be set in stone. SPCBs' Chairman and Member Secretary are required to meet specific requirements. A full-time chairperson with specialized expertise or relevant experience in environmental protection is required. The chairmanship of SPCBs and the member secretary are often chosen from the IFS. Operating regional and sub-regional offices and laboratories does not follow any set

standard. Due to the lack of meaningful sanctions or deterrents in the event of non-compliance, environmental disputes may drag on for years.

(Bhawan & Nagar, 2013)Because recycled plastics are mixed with colours, additives, stabilizers, flame retardants, and other chemicals, they are more environmentally damaging than virgin items. Additionally, new plastic can only be recycled two to three times since thermal deterioration reduces the material's strength each time it is recycled. It should be noted that there is no precise estimate of the entire amount of plastic garbage produced in the nation; nonetheless, 70% of all plastic consumption is wasted. Thus, the nation produces roughly 5.6 million tons of plastic garbage annually (TPA), or nearly 15342 tons daily.

(Bhattacharjee, 2014)It is critical to recognize the interdependence of the environment, development, legislation, and, most importantly, human health in this period of globalization. The Environmental Protection Act, 1986's 2011 Bio-Medical Waste (Handling &Management) Rules need to be implemented considerably more strictly and periodically supervised by the Central or state Pollution Control Boards. Surprise inspections by these Boards' representatives at hospitals or other healthcare facilities that produce bio-medical waste on a regular basis will significantly reduce this threat. It is also recommended that any hospital or healthcare facility providing these medical and diagnostic services make it a requirement to have a workshop for the people who would be in charge of collecting, sorting, and disposing of bio-medical waste.

(Pandey, 2014)In the long run, cleaning up waste contamination is significantly more expensive than preventing it at the source. One of the main factors contributing to environmental contamination is improper waste management. MSW uses the "concept of 5-R"—"Reduce, Reuse, Recover, Recycle, and

Remanufacture”—to decrease the amount of trash that needs to be disposed of by maximizing the potential of all components. Municipal Solid Waste Management produces energy in addition to other useful goods. According to a 2010 UNEP (United Nations Environment Programme) estimate, the amount of e-waste from outdated PCs in India will increase 500% from 2007.

(Mauch, 2016)The industry was the first to adopt the term "zero waste publicly." Palmer's idea of zero waste is founded on the idea that products should be utilized more than once before being thrown. A response to a sharp increase in trash, the demand for zero waste has only recently gained popularity. Circular economies persisted for a very long time. They didn't generate a lot of garbage. According to a rigorous definition of zero waste, waste should be eliminated by design features that permit the reuse of all components and are included in products from the beginning rather than through trash diversion or recycling. In the case of aluminium, scrap is currently the main supply of this metal since recycling is more advantageous from an economic and ecological standpoint than mining for new aluminium.

(Raveesh et al., 2015)Waste is any substance that the owner, manufacturer, or processor does not require. Landfilling is still the SWM choice for the United States and many other nations like India. There are several Pvt—companies offering comprehensive trash management solutions. Companies like HCL and Nokia are among the many who have launched various projects. Clients (both specific and commercial) can submit requirements for the dumping of e-waste using online e-waste recycling request registration that HCL has developed. Nokia started a take-back campaign to promote awareness of e-waste recycling. The main problems are the absence of gathering and discrimination at the source, a deficiency of property, the discarding of e-waste, a deficiency of knowledge, etc.

(Joshi & Ahmed, 2016)Like other developing nations, India's perspective of SWM by the general public suffers from the "not in my backyard" mentality and limits waste management to urban and local Municipal bodies. The majority of researchers underline how poorly ULBs enforce the legislation. The existing condition in India displays that practically not any trash is parted at the source, that origins several environmental problems and made it exceedingly challenging to separate waste at transfer stations, landfills, or treatment facilities. For MSWM, the function of rag-pickers in the Indian context is crucial. However, no consideration was paid to their contribution to the WM stream.

(Mani & Singh, 2016)MSWM has become a significant challenge due to the enormous amounts of trash produced and the health and environmental issues. Numerous research studies have shown that most urban local bodies in India cannot manage such massive amounts of solid trash because of institutional and budgetary weaknesses. The biggest obstacles include trash discrimination, door-to-door trash gathering, waste handling expertise, property sources, and methodological removal procedures. The Ministry of Environment, Forest and Climate Change and the Ministry of Urban Development (MoUD) of the Government of India have launched numerous guidelines and plans to enhance the present condition in response to these challenges.

(Bhattacharya et al., 2018)Municipalities around the nation have long struggled with the issue of waste burning. It has become commonplace to witness dense black smoke coming from dumps. The increase in the practice is primarily attributable to ignorance, a lack of understanding of the implications, and inadequate trash collection infrastructure that is already in place. These behaviors have been one of the leading causes of the fog in Delhi and the worsening air

quality indexes in towns like Varanasi. The National Green Tribunal (NGT) enacted a ban on solid trash burning and announced fines of 25,000 for every instance of burning bulk rubbish in public areas and 5,000 for backyard burning.

(Priti & Mandal, 2019)Urbanization, shifting consumer habits, and industrialization, which increase the production of municipal trash, are all lowering environmental quality and endangering sustainable development. Given that natural resources are becoming scarcer and landfills are still widely used to dispose of solid waste, the situation becomes more urgent. Technology is frequently seen as an integral part of waste management, with the functionality of various technologies depending on the volume and nature of trash. However, other elements that are sometimes overlooked but are as crucial for an effective waste management system include government policy, the legal system, financial resources, and the social and cultural background.

(Pujara et al., 2019)The importance of life cycle assessment in India's MSWM system, which offers a variety of scenarios, including composting, anaerobic digestion, incinerations, and landfilling, is highlighted in the current review. These techniques can maximize trash's economic and technical elements in addition to mitigating environmental difficulties. The optimum alternative for MSWM is widely acknowledged as waste segregation and energy and biogas recovery. In contrast, LCA should be a must in MSWM to meet the environmental goals in reducing the related impacts and satisfy the aim of solid waste management methods.

(Singh, 2019) The uncertain parameters of waste management, like the rate of waste production, disposal facility, treatment cost, etc., are discussed in this paper. The optimization techniques like fuzzy, and stochastic programming, are used previously to address the problem of uncertain parameters. The minimax regret

optimization approach breaks the problem down into more minor issues. The use of integrated waste management and the fuzzy analysis technique in addressing uncertainty issues is highlighted.

(Srivastava et al., 2020)The historic cultural center of India, Varanasi, needs help implementing effective waste management procedures. Due to the waste production rate of 0.42 kg per person per day (n = 117), which is predicted to be between 550 and 650 TPD, harms mankind and ecological healthiness. The current study seeks to investigate and evaluate the wastes, existing procedures, ecological profile, phytotoxic city, and vermicomposting of biological segment of MSW by way of a workable waste management method at an abandoned open dumping site. According to a compositional study, waste's organic fraction (46.13%) is a significant component, coupled through a sizable number of weight yalloys. MSW had a fatty worth of 2351.4 cal per g and a moisture content of 34.72%.

(Prajapati et al., 2021)This study examines the issues and current MSW management techniques and suggests how Jaipur in Rajasthan, India, might improve MSW management. A thorough research should examine this city's waste management policies and pinpoints the significant issues, despite being the state capital and the most popular tourist destination in the northern portion of India. According to the report, unregulated landfilling, insufficient public engagement, poor MSW law implementation, and waste conversion are significant obstacles to MSW management in Jaipur. The cost and environmental effect of MSW administration should be as low as possible using optimization models and life cycle assessment techniques.

(Cheela et al., 2021)This study summarizes current waste management operations, financial and institutional demographics, and field investigations to evaluate

SWM systems by waste management regulations in six chosen Indian smart cities. Participatory methods were used in the study to gather information from stakeholders and local organizations. Using the investigation results, indicative techniques for creating waste management systems were developed. To design an integrated SWMS for a Smart Metropolitan, a discussion of routes covers waste characterization, financing sources, data technology, and service level benchmarks. The findings of this study will assist local governments in creating waste management plans to hasten the transition to cutting-edge and maintainable waste organization.

(Sharma et al., 2021)The World Bank predicts that by 2050, the garbage produced annually will have increased to 3.40 billion tons (2016). India is the third major creator of municipal solid garbage worldwide, according to Waste Atlas 2017, and will be a key player in finding solutions to this problem on a global scale. A "Sustainable" management system handles waste from creation to final disposal in a socially, economically, and environmentally responsible manner.

4. Hypothesis

The hypotheses of the present study are:

- The legislations regarding the environmental protection and proper management of municipal solid wastes are neither comprehensive nor adequate.
- The poor execution of the solid waste management guidelines still keeps the country in a polluted atmosphere.
- The municipalities are not serious about segregations of garbage. Though it is clear proper segregated waste will produce wealth to municipalities.

- Awareness level of Dehradun is low and municipality of Dehradun is not using his whole capacity to punish the wrongdoer and increasing awareness level of Doonites.

5. Research Objectives

The objective(s) of this research are: -

The objectives of the present research is to identify some of the major issues, forces and factors that are central to the problem of protection, conservation and management of the environment and solid waste management

- To examine critically the various laws dealing with the environment protection and municipal solid waste management.
- To evaluate the efficacy and adequacy of the existing laws in combating the environmental degradation.
- To study the part of the courts in relation to environmental protection legislation and its interpretation.
- To analyze the effective role played by the enforcement machinery in implementing laws relating to environmental protection and municipal solid waste management.
- To analyze the type and magnitude of municipal solid waste management.
- To examine the present method of discrimination, gathering, conveyance and clearance of municipal solid waste in Uttarakhand.

6. Research Methodology

The present work has been accomplished by adopting doctrinal, analytical, empirical, and observational methods. At the same time-judicial pronouncement

has been critically analyzed to substantiate the logic and rationale behind the different provisions relating to solid waste management. The present study has enriched the existing Knowledge about solid waste management. The study is primarily doctrinal, so it is highly dependent upon various literatures that have been taken from different subjects like Science, Environment, Economics, medicine, History, Politics, Public Administration, and others.

7. Expected outcome

The Supreme Court raised serious concerns about the country's failure to execute solid waste management regulations on March 27, 2018, stating that "India will one day go down under the garbage." With 109,589 tons of garbage produced daily, India is the world's third-greatest producer of MSW day, and India is the third-greatest producer of MSW in the world. Due to a lack of adequate MSW handling infrastructure, it generates comparatively large rates of urban garbage per capita.

However, in terms of waste management strategy, we're about where we were in the Holocene. We didn't have a statute addressing MSW management till 2000. The issue of MSW wasn't really addressed by any environmental law, despite the introduction of the Water (Prevention & Control of Pollution) Act of 1974, the Air (Prevention and Control of Pollution) Act of 1981, and the Environment Protection Act of 1986. Some regulations, such as the 1989 Hazardous Wastes (Management and Handling) Rules and the 1998 Biomedical Waste (Management and Handling) Rules, merely marginally addressed the issue.

Almira Patel v. Union of India: The Central government merely acted and promulgated Municipal Solid Wastes (Management and Handling) Regulations, 2000 rules under Section 5 of the Environment Protection Act, 1986 after a writ

petition, Almira Patel v. Union of India, was filed earlier the Supreme Court. These regulations ultimately gave municipal governments across the nation a standard framework for managing MSW.

So, my research work guides the people about ground situation of the Uttarakhand in MSWM.

8. Tentative chapterization

There are seven chapters in the complete research.

"Introduction," the first chapter, deals with the introduction of the research project. It mainly addresses the elements of the environment, the close connection between people and the environment, the idea of environmental protection, the issue of wastes in the past and present, how the buildup of waste causes significant sanitary and health issues for the populace, the sincere efforts of the government to combat problems causing environmental degradation, and the development of the law to handle pollution and for environmental protection. It also discusses the approach taken in developing this thesis. Again, in this chapter, review of literature is put forth. Hypothesis is constructed in which four assumptions have been made. Side by side, the selection of research questions and significance of research have been briefly mentioned.

The second Chapter is 'Global prospective towards Municipal Solid Waste Management'. Municipal Solid waste management is a worldwide matter to each individual. "Municipal Solid waste management is everyone's business. Ensuring effective and proper Municipal solid waste management is critical to the achievement of the Sustainable Development Goals," Researcher will incorporate Different countries policy and legal provisions on MSWM.

The third chapter titled "National prospective and legal framework on municipal

solid waste management" a detailed discussion is made to analyze the various Constitutional and statutory provisions and policies which have aimed to conserve and safeguard. The obligations of the State as well as the citizens towards MSWM are discussed.

"Judicial trends to appreciate the problem of MSWM" is the title of the fourth chapter. This chapter emphasizes the judiciary's function in municipal solid waste management. Numerous Supreme Court and NGT rulings concern MSWM and its administration nationally.

The fifth chapter will be comparative examination of Municipal Solid Waste Management in Dehradun and Indore

The sixth Chapter is findings and data analysis of MSWM in special reference to Dehradun, Uttarakhand. Researcher here focuses on ground situation of UK.

The researcher provides his unique definitive conclusions in the seventh chapter, "Conclusion and Suggestions," as well as practical and corrective recommendations for improving the effectiveness of the current legislative framework for the careful regulation of municipal solid wastes.

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